ORIGINAL

OPEN MEETING

MEMORANDUM

TO: THE COMMISSION

FROM: Utilities Division

DATE: September 30, 2011

RE: SOUTHWEST GAS CORPORATION – APPLICATION FOR APPROVAL OF AN ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE TECHNOLOGY PORTFOLIO IMPLEMENTATION PLAN (DOCKET NO. G-01551A-10-0458)

On November 12, 2010, Southwest Gas Corporation ("Southwest" or "the Company") filed with the Arizona Corporation Commission ("Commission") an application for an increase in rates for service provided in Arizona. Included as part of the rate case filing was Southwest's *Arizona Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan* ("EE and RET Plan").

Modified EE and RET Plan

As part of the current rate case, and as noted in the Settlement Agreement (July 15, 2011), Southwest agreed to provide supplemental EE information in support of a modified EE and RET Plan with EE measures that are cost-effective at the measure level. Under the proposed Settlement Agreement, the modified EE and RET Plan was to have a proposed portfolio budget exceeding $4.4 million, with customer energy savings of at least 1,250,000 therms (not inclusive of therm equivalents) within nine months of Commission approval of the modified EE and RET Plan.

Scope of Review

The scope of review herein will be the Southwest EE and RET Plan, as modified under the proposed Settlement Agreement. This modified EE and RET Plan consists of eight proposed programs listed in the Summary Description Table (below), all named, or renamed, to reflect the "*Smarter, Greener, Better*" ("*SGB*") branding adopted by the Company. The analysis covers the eight programs (seven EE and one RET) and their associated measures, as proposed for inclusion in the modified Southwest EE and RET Plan. Cost-effectiveness has been calculated on a per-measure level for the proposed energy efficiency programs.[1] Additional detail on each program has been provided in individual sections, herein.

[1] New construction and major rehabilitation programs are generally reviewed for cost-effectiveness on a whole house or whole building basis, with the whole house or building treated as a measure.

SUMMARY DESCRIPTION TABLE

Current (and former) Name	Existing/New	Description of program
SGB Residential Rebates (formerly Consumer Products)	Existing, new measures	Promotes Residential energy efficiency measures.
SGB Homes (formerly Energy Star Home)	Existing, new measures	Promotes Residential whole-house energy efficiency.
SGB Business Rebates (formerly Commercial Equipment)	Existing, new measures	Promotes Non-residential energy efficiency measures.
SGB Custom Business Rebates	New	Allows Non-Residential customers to design and propose energy efficiency projects, with rebates based on verifiable savings.
SGB Distributed Generation (formerly Distributed Generation)	Existing	Promotes Non-residential CHP.
SGB Low Income Energy Conservation (formerly Low Income Energy Conservation)	Existing	Promotes low-income weatherization.
SGB Energy Education	New	Promotes energy efficient behaviors by both Residential and Non-residential customers.
SGB Solar Thermal Rebates	New	Promotes solar thermal water and pool heating systems for Residential and Non-residential customers

Budget

The budgets for the modified Southwest EE and RET Plan are listed by category in the table below. Individual program budgets have been adjusted to reflect the measures proposed in the Company's current filing. The total budget proposed for the modified Southwest EE and RET Plan is $8,386,545, as compared to the current approved portfolio budget of $4.4 million:

BUDGET TABLE

Program	Rebates	Administration	Outreach	Delivery	MV&E	Program Total Cost
Residential						
Residential Rebates	$ 2,108,900	$ 22,972	$ 183,774	$ 666,180	$ 45,944	$ 3,027,770
Homes	$ 1,810,500	$ 90,000	$ 270,000	$ 45,000	$ 45,000	$ 2,260,500
Total Residential	**$ 3,919,400**	**$ 112,972**	**$ 453,774**	**$ 711,180**	**$ 90,944**	**$ 5,288,270**
Non-Residential						
Business Rebates	$ 481,875	$ 44,500	$ 97,900	$ 222,500	$ 44,500	$ 891,275

Custom Business Rebates	$ 21,582	$ 3,921	$ 19,605	$ 50,971	$ 3,921	$ 100,000
Distributed Generation	$ 515,000	$ 23,500	$ 97,500	$ 97,500	$ 23,500	$ 757,000
Total Non-Residential	**$ 1,018,457**	**$ 71,921**	**$ 215,005**	**$ 370,971**	**$ 71,921**	**$ 1,748,275**
Low-Income						
L-I Weatherization[1]	$ 373,500	$ 67,500	$ 9,000	$ -	$ -	$ 450,000
L-I Bill Assistance[2]	$ -	$ -	$ -	$ -	$ -	$ 200,000
Total Low-Income	**$ 373,500**	**$ 67,500**	**$ 9,000**	**$ -**	**$ -**	**$ 650,000**
Education						
Residential Conservation Behavior	$ -	$ -	$ 200,000	$ -	$ -	$ 200,000
Renewable Energy Resource Technology						
Solar Thermal Rebates	$ 350,000	$ 15,000	$ 60,000	$ 67,500	$ 7,500	$ 500,000
Total Portfolio	**$ 5,661,357**	**$ 267,393**	**$ 937,779**	**$1,149,651**	**$ 170,365**	**$ 8,386,545**

[1]L-I Weatherization delivery and evaluation are performed by the Arizona Governor's Office of Energy Policy and community agencies.
[2]L-I Bill Assistance is not a rebate program. Administration is capped at $15,000.

The Company has requested flexibility to transfer funds between budget categories within programs, and between programs within each customer class. Staff recommends that Southwest be allowed to transfer up to 20 percent of funding between the SGB Residential Rebates and SGB Homes programs, if appropriate, to accommodate participation levels. Staff also recommends that Southwest be allowed to transfer up to 20 percent of funding between the SGB Business Rebates and SGB Custom Business programs, if appropriate to accommodate participation levels. Staff also recommends that Southwest be allowed to transfer funds between budget categories within each program, as long as Administration costs retained by Southwest are limited to 10% of each program's individual budget.

EE and RET Portfolio Overview

The Southwest EE and RET Portfolio proposes the following eight programs and measures. Staff has recommended approval of all eight programs, and 23 of the 24 proposed measures, (excluding the Wall Insulation measure, which was not cost-effective), with the modifications listed herein:

- *SGB* Residential Rebates: (i) tankless water heaters; (ii) smart low-flow showerheads; and (iii) weatherization measures.

- *SGB* Homes: (i) Home Certification; (ii) Tankless Water Heaters; and (iii) Attic Insulation.

- *SGB* Business Rebates program: (i) tankless water heaters; (ii) condensing boilers; (iii) combination ovens; (iv) conveyor ovens (two types); (v) commercial dishwashers (five types); and (vi) air curtains.

- *SGB* Custom Business Rebates: Non-residential customer-proposed energy efficiency projects, including: (i) retrofits and/or improvements to existing systems; and (ii) first time installations that exceed industry standards.

- *SGB* Distributed Generation: high efficiency Combined Heap and Power ("CHP") technologies to large commercial and industrial customers.

- *SGB* Low-Income Energy Conservation ("LIEC"): weatherization for low-income households; bill assistance.

- *SGB* Residential Conservation Behavior: periodic reports (up to 4 reports per year) showing customers how their homes compare with similar homes, and recommending specific actions that the household can take to save energy.

- *SGB* Solar Thermal Rebates: (i) Solar Water Heating and (ii) Solar Pool Heating Systems.

Projected Savings

Southwest's modified EE and RET Plan is projected by the Company to save 1,262,000 therms within nine months of the Commission approving the modified EE and RET Plan. This projected level of savings exceeds the 1,250,000 therms required under the terms of the proposed Settlement Agreement:

PROJECTED SAVINGS TABLE

Programs and Measures	**Projected Savings**
Residential	
Smarter, Greener, Better Residential Rebates	261,000
Smarter, Greener, Better Homes	241,000
Non-residential	
Smarter, Greener, Better Business Rebates	223,000
Smarter, Greener, Better Custom Business Rebates	54,000
Smarter, Greener, Better Distributed Generation	250,000
Low-income	
Smarter, Greener, Better Low-Income Energy Conservation	21,000
Educational	

Smarter, Greener, Better Residential Conservation Behavior	125,000
Renewable Energy Resource Technology	
Smarter, Greener, Better Solar Thermal Rebates	87,000
Total:	1,262,000

Staff's analysis indicates that the per-unit therm savings from the Tankless Water Heater measure are likely to be higher than initially estimated by the Company. This is significant because this measure is included in three programs and total participation for this measure is projected at more than 4,200. Based on the revised savings for this measure, if projected participation levels meet expectations, therm savings for the overall modified EE and RET Plan would increase to over 1.3 million therms.

Additional Savings

The projected therm savings listed above also do not include therm equivalents (such as kWh), or savings from building codes, both of which can be taken into account for purposes of meeting the energy efficiency savings standards under the Gas Energy Efficiency rules ("Rules"). Annual projected therm savings from the Company's activities in support of energy efficient building codes for Commercial Buildings in the City of Mesa are estimated at 5,700 therms.

Some of the proposed portfolio measures (particularly those enhancing the thermal envelope for buildings) produce electric savings in addition to gas savings. For the modified EE and RET Plan as a whole, Staff has estimated annual electric savings at approximately 2.1 million kWh. These kWh, or therm equivalent, savings can also be taken into account for purposes of meeting the energy efficiency standards under the Rules.

Cost-Effectiveness

The table below lists the benefit-cost ratios for each of the measures proposed as part of each of the eight programs included in the modified EE and RET Plan. In order to be cost-effective, a measure must have a benefit-cost ratio of greater than 1.0, meaning that the avoided costs (or benefits) of a measure must be greater than the costs associated with purchasing and installing the measure. Staff's analysis indicates that 20 out of 24 EE measures have a benefit-cost ratio above 1.0 and are cost-effective.

The RET measures are also included in this table as part of Southwest's modified EE and RET Plan, but RET measures are not required to be cost-effective and Staff has not calculated or included benefit-cost ratios for these measures.

BENEFIT-COST RATIO TABLE

Programs and Measures	Benefit-cost ratio
Residential	
Smarter, Greener, Better Residential Rebates	
Tankless Water Heater	0.94
Smart Low-Flow Showerhead	1.21
Window	1.45
Attic Insulation	0.97
Floor Insulation	1.35
Wall Insulation	0.75
Smarter, Greener, Better Homes	
Home Certification	1.36
Tankless Water Heater	1.08
Attic Insulation	1.44
Non-residential	
Smarter, Greener, Better Business Rebates	
Tankless Water Heater	1.08
Condensing Boiler	1.47
Combination Oven	1.20
Conveyor Oven (<25")	2.70
Conveyor Oven (>25")	2.08
Dishwasher (Low Temp): Door Type	1.48
Dishwasher (High Temp/Gas Booster Heater): Under Counter	1.18
Dishwasher (High Temp/Gas Booster Heater): Door Type	1.53
Dishwasher (High Temp/Gas Booster Heater): Single Tank Conveyor	1.75
Dishwasher (High Temp/Gas Booster Heater): Multi-Tank Conveyor	2.26
Air Curtain	2.22
Smarter, Greener, Better Custom Business Rebates	
Typical Custom Business Project	3.55
Smarter, Greener, Better Distributed Generation	
Typical Distributed Generation Project	1.56
Low-income [2]	
Smarter, Greener, Better Low-Income Energy Conservation	
Typical Low-Income Energy Conservation Project	0.98

[2] The benefit-cost ratio is based on actual program performance over four years. The health/safety and bill assistance components of the LIEC program provide benefits to ratepayers, but are not primarily designed to produce to energy savings and were not included in the cost-benefit analysis.

Educational	
Smarter, Greener, Better Energy Education	
Residential Conservation Behavior	1.24
Renewable Energy Resource Technology	
Smarter, Greener, Better Solar Thermal Rebates	
Solar Water Heater System	N/A
Solar Pool Heating System	N/A

Rebates

Limits. Staff reviewed the proposed rebates and determined that all the per-measure incentives were at 75 percent or below of the incremental costs of the proposed measures. Limits of 50-to75 percent of incremental cost are typical for Commission-approved energy efficiency programs. Some of the rebates, such as for the Custom Business and Solar Thermal Rebates programs feature rebates partly based on therm savings, but also include upper limits (usually up to 50 percent of installed cost) based on percentages of project or measure costs.

Exceptions. The Low-Income Energy Conservation program pays weatherization funds to community action agencies performing weatherization services, rather than paying out traditional incentives, while the Residential Conservation Behavior Program is educational in nature and does not offer rebates.

REBATE TABLE

Programs and Measures	**Rebate**	**% of incremental cost**
Residential		
Smarter, Greener, Better Residential Rebates		
Tankless Water Heater	$450	74%
Smart Low-Flow Showerhead	$30	75%
Window	$0.95/unit (per square foot)	73%
Attic Insulation	$0.20/unit (per square foot)	40%
Floor Insulation	$0.30/unit (per square foot)	71%
Wall Insulation	$0.45/unit (per square foot)	70%
Smarter, Greener, Better Homes		
Home Certification	$450	29%
Tankless Water Heater	$450	74%

Attic Insulation	$0.20/unit (per square foot)	40%
Non-residential		
Smarter, Greener, Better Business Rebates		
Tankless Water Heater	$450	74%
Condensing Boiler	$1.25/per MBTUH (based on input rating, usually 4-5,000 MBTUH)	75%
Combination Oven	$1,100	72%
Conveyor Oven (<25")	$400	71%
Conveyor Oven (>25")	$900	72%
Dishwasher (Low Temp): Door Type	$1,500	75%
Dishwasher (High Temp/Gas Booster Heater): Under Counter	$750	75%
Dishwasher (High Temp/Gas Booster Heater): Door Type	$1,575	75%
Dishwasher (High Temp/Gas Booster Heater): Single Tank Conveyor	$2,250	75%
Dishwasher (High Temp/Gas Booster Heater): Multi-Tank Conveyor	$3,000	75%
Air Curtain	$2,100	75%
Smarter, Greener, Better Custom Business Rebates		
Typical Custom Business Project	$1.00/therm 1st year annual saving OR 50% of eligible project cost (as determined by Southwest)	50% of eligible project cost

Smarter, Greener, Better Distributed Generation		
Typical Distributed Generation Project	Rebate per/kW, based on fuel efficiency	40%-50%/kW; and up to 75% of engineering study, up to $3,000
Low-income		
Smarter, Greener, Better Low-Income Energy Conservation		
Typical Low-Income Energy Conservation Project	N/A	N/A
Educational		
Smarter, Greener, Better Energy Education		
Residential Conservation Behavior	N/A	N/A
Renewable Energy Resource Technology		
Smarter, Greener, Better Solar Thermal Rebates		
Solar Water Heater System	$15/therm	Up to 50% of installed cost
Solar Pool Heating System	$15/therm	Up to 50% of installed cost

Modified EE and RET Plan: Descriptions

The following sections describe the individual programs, including issues specific to those programs.

SGB Residential Rebates

Program Description. The Southwest modified EE and RET *SGB* Residential Rebates Program proposes to include the following measures: (i) tankless water heaters; (ii) smart low-flow showerheads; and (iii) weatherization measures (windows, and attic, floor and wall insulation).

Tankless water heaters. Southwest proposes to continue offering rebates for tankless water heaters. Tankless water heaters were originally approved for inclusion in the Southwest portfolio in Decision No. 71718 (June 3, 2010).

The Energy Star site states that an estimated 15 percent of an average home's energy use goes to heating water, and that tankless water heaters save 45 percent to 60 percent over the minimum standards. Another factor increasing the overall cost-effectiveness of tankless water heaters is an expected lifespan (20 years), that is approximately twice that of high efficiency storage water heaters (8-10 years).

Smart Low-flow Showerheads. Southwest also proposes to continue smart showerheads as a measure in its *SGB* Residential Rebates program. The "smart" showerhead is a low-flow showerhead with a water turn-off feature, designed to minimize the amount of hot water wasted during the warm-up cycle, before the user enters the shower. The "smart" feature includes a thermostatic valve that pauses a shower's water flow once the water is hot enough for bathing, when the shower may otherwise be running unattended. Once a user is ready to actually enter the shower, he or she then turns on an already-heated flow of water. This measure is designed to both conserve water and reduce energy use.

Weatherization measures. Southwest also proposes to offer rebates on weatherization measures. The weatherization measures are designed to improve the energy efficiency and comfort of homes by enhancing windows and improving insulation of the walls, ceilings, and floors. Insulation and air sealing save energy during both cooling and heating seasons, resulting in both natural gas and electric savings. The Energy Star site estimates that, if combined with air sealing, insulation can save up to 10 percent of a typical home's energy costs.

With respect to air sealing measures, only the Windows measure has been proposed as part of the modified Southwest EE and RET Plan. (An Energy Star window reduces the heat transfer in to the home, uses energy efficient materials for the frame, and is coated to provide a sun screen.) Staff recommends that the Company continue to research cost-effective measures, and that one or more additional air sealing measures be proposed in future filings, if they are found to be cost-effective.

Program Analysis/Cost-effectiveness. The showerhead, window and floor insulation measures have benefit-cost ratios above 1.0 and are cost-effective. Staff's analysis indicates that, although the Tankless Water Heater and Attic Insulation measures have benefit-cost ratios slightly below 1.0, with ratios of 0.94 and 0.97 respectively, both measures are very close to the level required for cost-effectiveness. Taking into account avoided environmental costs, the value of which has not been established, but which are greater than zero, these measures are likely to be cost-effective in practice. In addition, the inclusion of these measures in the Residential Rebates program provides Residential customers with a greater range of options for enhancing the energy efficiency of their existing homes. Staff recommends that the tankless water heater and attic insulation measures be approved.

The Wall Insulation measure has an estimated benefit-cost ratio of 0.75, putting it well below the level required to find a measure cost-effective, even taking into account environmental savings. Staff recommends against inclusion of the Wall Insulation measure, but also recommends that the funding associated with this measure be used for other *SGB* Residential Rebates program measures, if approved by the Commission.

Program Cost Issue. The Tankless Water Heater measure has a benefit-cost ratio above 1.0 as part of the *SGB* Homes and Business Rebates programs, but drops slightly below 1.0 as part of the *SGB* Residential Rebates program. The same variance on the benefit-cost ratio exists for the Attic Insulation measure, which is also part of the *SGB* Homes program. Staff's analysis

indicates that these variances result from higher per-unit non-incentive (or program) costs associated with the *SGB* Residential Rebates program. In response to an inquiry from Staff, Southwest reported that the large number of rebates and higher level of verification and inspection necessary for the Residential and Business Rebates programs have resulted in increased delivery costs, compared to other programs. (There is less negative impact to the Business Rebates program, due to the generally higher benefit-cost ratios for that program.) Staff recommends that Southwest work to limit the program costs for the *SGB* Residential Rebates program.

Staff Recommendations: Summary. Below are Staff's recommendations with respect to the Residential Rebates program:

- Staff recommends approval of the Smart Low-Flow Showerhead, Window and Floor Insulation measures in the Residential Rebates program.

- Staff recommends inclusion of the Tankless Water Heater and Attic Insulation measures in the Southwest EE and RET Plan, but also recommends that Southwest work to limit program costs associated with delivering all measures for the *SGB* Residential Rebates program.

- Staff recommends against inclusion of the Wall Insulation measure in the *SGB* Residential Rebates program, but that the funding associated with the measure be used for other measures in the program.

- Staff recommends that the Company continue to research cost-effective measures, and that one or more additional air sealing measures be proposed in future filings, in any program where they are appropriate, if such measures are found to be cost-effective.

- Staff recommends that Southwest work to limit the program costs for the *SGB* Residential Rebates program.

SGB Homes

Program Description. The Southwest modified EE and RET *SGB* Homes program proposes to offer (i) Home Certification; (ii) Tankless Water Heaters; and (iii) Attic Insulation. The Smarter Greener Better Homes program is designed to increase the participation of Arizona homebuilders in building more energy-efficient housing. Rebates will be offered to homebuilders for homes certified as Energy Star, and for installing tankless water heaters and energy efficient attic insulation.

Home Certification. To be certified under the program, homes are required to meet Version 3.0 of EPA's program requirements, following either the Energy Star Prescriptive Path, or the Energy Star Performance Path. The Version 3.0 Overview states that homes built to

Version 3 Guidelines "will be at least 20 percent more energy efficient than homes built to the 2009 International Energy Conservation Code." Mandatory requirements include improvements to: (i) the thermal envelope; (ii) heating, ventilation and air conditioning (HVAC); and (iii) the water management system. Verification by a third party rater is required.

Tankless Water Heaters and Attic Insulation. These measures have been discussed with respect to the *SGB* Residential Rebates program, above. The two measures differ as part of the *SGB* Homes because, with lower per-unit program costs, both have a higher benefit-cost ratio and improved cost-effectiveness.

Program Analysis/Cost-effectiveness. All three proposed measures have benefit-cost ratios above 1.0 and are cost-effective. Energy efficiency measures installed as part of initial construction are usually more cost-effective than retrofits. In addition, energy efficiency measures that are part of the original construction are experienced over the full lifespan of a structure, rather than just during the period following a retrofit.

Staff Recommendation. Staff recommends approval of the *SGB* Homes program, along with all three proposed measures.

SGB Business Rebates

Program Description. The proposed Southwest modified EE and RET *SGB* Business Rebates program offers (i) tankless water heaters; (ii) condensing boilers; (iii) combination ovens; (iv) conveyor ovens (two types); (v) commercial dishwashers (five types); and (vi) air curtains.

Southwest Gas will offer the *SGB* Business Rebates program to both new and existing non-residential customers. It is designed to encourage the purchase of high efficiency equipment to reduce energy consumption. Rebates are available for purchasing and installing qualifying natural gas high efficiency measures at individually and master metered commercial properties.

Program Analysis/Cost-effectiveness. The *SGB* Business Rebates program and the *SGB* Residential Rebates program include a large number of rebates, and Southwest has indicated that both programs require a higher level of verification and inspection compared to other programs. This results in higher delivery costs and impacts cost-effectiveness. But commercial equipment is generally used more hours per year, making higher savings possible for Non-residential programs. This is true for the *SGB* Business Rebates program, which has generally higher savings and benefit-cost ratios than the *SGB* Residential Rebates program. All the measures proposed for the *SGB* Business Rebates are cost-effective even with higher delivery costs.

Staff Recommendation. Analysis indicates that all the *SGB* Business Rebates program measures have benefit-cost ratios above 1.0 and are cost-effective. Staff recommends that the program be approved and include all the measures proposed by the Company.

SGB Custom Business Rebates

Program Description. The *SGB* Custom Business Rebates program allows Non-residential customers to design their energy efficiency projects, including: (i) retrofits and/or improvements to existing systems; and (ii) first time installations that exceed industry standards. Proposed measures must produce verifiable natural gas usage reductions, be installed in existing structures or new construction, have a minimum useful life of seven years, and exceed minimum cost-effectiveness.

Program Analysis/Issues. Since the *SGB* Custom Business Rebates program is intended to allow Non-residential customers to propose energy efficiency projects tailored to meet their specific needs, no two sets of measures are likely to be the same. Cost-effectiveness analysis was done on the basis of incremental costs and average therm savings for eight typical projects, combined with the program costs projected specifically for the *SGB* Custom Business Rebates.

The *SGB* Custom Business Rebates program, as proposed, includes a "Commissioning Opt-Out." The Opt-Out would allow participating customers to choose reduced rebates, rather than conduct the commissioning activities. (For purposes of the SGB Custom Business Rebates program, "commissioning" includes verification of project savings and confirmation that the measures are operating as intended.) Because verification and confirmation are required in order to ascertain whether measures are achieving the desired energy savings, the Opt-Out provision should be removed from the proposed *SGB* Custom Business Rebates program.

Staff Recommendation. Staff recommends approval of the *SGB* Custom Business Rebates program, with the modification that all participants be required to verify savings in order to be eligible to receive rebates, i.e., the Opt-Out provision should not be approved.

SGB Distributed Generation

Program Description. Southwest would offer the Smarter Greener Better Distributed Generation ("*SGB* Distributed Generation") program to large commercial and industrial customers in the Company's Arizona service territory. Specifically, the SGB Distributed Generation program will promote high efficiency Combined Heat and Power ("CHP") technologies.

Distributed Generation is defined as localized, on-site mechanical or electrical power generation, while CHP describes any system that uses a primary energy source to simultaneously produce electric energy and useful process heat. Most CHP systems are configured to generate electricity, recapture the waste heat, and use that heat for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying, or any other thermal need. Alternately, CHP may use excess heat from industrial processes and convert it into electricity.

Program Analysis/Issues. Southwest's Distributed Generation program was originally approved in September 2007. To date, although Southwest has been actively promoting the program, no CHP projects have gone forward, largely due to customer concerns about the high initial cost of CHP. Keeping the program in place has been reasonable, given the potentially high savings associated with CHP, and the comparatively low costs associated with the promotion process. (For example, during 2009 the total cost for this program was $1,275, while in 2010, during active discussions, the total cost came to $8,039.)

Southwest has now partnered with the Arizona Energy Office (now the Governor's Office of Energy Policy ("OEP")), which received an American Recovery and Reinvestment Act CHP grant, allowing applicants to qualify for incentives from both programs, and potentially increasing the level of incentive to as much as 75 percent of the installed cost.

In September 2010, Southwest received an application from a hospital in southern Arizona to install a CHP system. The contractor working on the installation of the system was targeting completion in 2010, but has notified Southwest that the CHP project has been delayed. The turbine is on site, but the contractor has stated that it is still in negotiations with Tucson Electric Power regarding the interconnection agreement. As a result of this delay, the installation of the required Southwest facilities has been delayed. Southwest has completed the preliminary engineering, right-of-way research, acquisition of the necessary easements, and pipeline design. Once the system is installed and is in operation, Southwest Gas will verify the efficiency during operation before the incentive will be distributed.

Staff Recommendation. Staff recommends that the *SGB* Distributed Generation program be approved for continuation, but recommends that a revised *SGB* Distributed Generation be submitted for Commission consideration, if no CHP project begins the installation process during the 12 months following Commission approval of this continuation.

SGB Low Income Energy Conservation

Program Description. Southwest proposes to continue the Low-Income Energy Conservation ("LIEC") program for income-qualified residential customers in the Company's Arizona service territory. The program targets low-income customers who require weatherization for their homes and/or emergency assistance to pay their utility bills. The program assists low-income households in increasing their energy efficiency.

The weatherization component of the program includes both home weatherization and consumer education for income-qualified residences. Energy improvements, such as adding insulation to the walls and roofs, can last for the remaining life of the dwelling, reducing energy usage and lowering utility bills.

Program measures fall into four major categories: 1) duct repair; 2) infiltration control; 3) insulation (including attic, duct and floor); and 4) repair or replacement of appliances that are not operational or pose a health hazard. Typical weatherization services include installing insulation,

sealing, tuning and repairing cooling and heating systems, and mitigating heat gain should this be loss through windows, doors, and other infiltration points.

Program Analysis/Issues. At 0.98, the *SGB* Low-Income program comes in slightly below the benefit-cost ratio of 1.0 required for cost-effectiveness. Taking into account avoided environmental costs, the value of which has not been established, but which are greater than zero, the *SGB* Low-income Conservation program is likely to be cost-effective in practice. In addition, during most program years, Southwest participates in special projects that improve overall LIEC program cost-effectiveness, such as the renovation of multifamily housing. These projects involve renovating an entire low-income multifamily building, and can produce savings with a higher benefit-cost ratio, due to economies of scale. The City of Phoenix has notified Southwest that it plans to propose a special project for the 2011/2012 program year.

Staff Recommendation. The *SGB* LIEC program addresses the energy efficiency needs of low-income Residential customers on a cost-effective basis, reducing utility costs and improving the health and safety for low-income households. Staff recommends that the *SGB* Low-income Conservation program be approved for continuation as part of the modified Southwest EE and RET program.

SGB Residential Conservation Behavior

Program Description. Southwest has proposed a Residential Conservation Behavior ("*SGB* Conservation Behavior") program that would drive customer conservation behavior by providing participating residential customers with periodic reports (up to 4 reports per year) showing how their homes compare with similar homes, and recommending specific actions that the household can take to save energy. Reports would be mailed to customers, and participants would also be encouraged to access a program web portal for more information.

The *SGB* Conservation Behavior program would target approximately 23,000 residential customers in the Company's Arizona service territory and is estimated to result in savings of approximately 125,000 therms. This program is similar to the Arizona Public Service Company ("APS") Residential Conservation Behavior program that recently launched on a pilot basis. If both utilities continue their Residential Conservation Behavior programs in the future, Southwest Gas will explore a possible partnership with APS.

Program Analysis/Issues. Conservation behavior programs should be designed to protect customer confidentiality. Southwest has informed Staff that it will require the contractor to sign a confidentiality agreement to protect customer data. Customers chosen to participate in the program will also have a simple way to opt out, should they choose not to participate.

Recommendations

Staff recommends that the Residential Conservation Behavior program be approved.

Staff recommends that Southwest review data from the first year of the program and that, following this review, the Residential Conservation Behavior program be continued only if it produces documented and cost-effective energy savings.

Staff recommends that Southwest report on the results from the Residential Conservation Behavior program, including whether the program is cost-effective and should be continued, in the following Implementation Plan.

SGB Solar Thermal Rebates

Program Description. The *SGB* Solar Thermal Rebates program would offer rebates to both Residential and Non-residential customers for Solar Water Heating and Solar Pool Heating Systems. Rebates would be paid on qualified solar thermal systems based on proof of purchase and installation.

Program Analysis/Issues. Due to the high cost, most Residential customers do not heat their pools, so installing a Residential solar pool heater is likely to extend the swimming season without saving energy. Alternatively, Non-residential customers, such as hotels and resorts, are likely to utilize pool heaters to accommodate winter visitors, a differing usage pattern that creates opportunities for energy savings. (Renewable programs governed by the REST Standards include commercial solar pool heaters, but not residential solar pool heaters. See R14-2-1802.B.3.)

The OG-100-certified collectors are the qualifying measure specification for the SGB Solar Thermal Rebates program, but OG-100 certification applies to collectors only. In comparison, the OG-300 certification covers complete packaged water heating systems for residential and small commercial buildings. The OG-300 certification rates the performance of an entire system, rather than only the collector, and would provide better, more reliable, information on residential and small commercial applications. (Domestic Solar Water Heating Systems must also be rated and certified using the OG-300 system under the APS 2011 REST Plan.)

OG-100 certification remains appropriate for large, non-residential systems, because, while there is currently no whole-system certification for larger commercial systems (which vary from customer to customer), the OG-100 collector rating shows the performance of the collector, which is the most significant component of a solar water heater in either a residential or non-residential application.

Recommendations

Staff recommends that the *SGB* Solar Thermal Rebate program be approved, with the following modifications:

- Staff recommends that the Solar Thermal Pool Heating measure not be approved for inclusion in the *SGB* Solar Thermal Rebates program as a Residential measure.

- Staff recommends that funding which would have been used to allow Residential customers to participate in the Solar Thermal Pool Heating measure be used, instead, to allow additional participation by Residential customers in the Solar Thermal Water Heater measure.

- Staff also recommends that OG-300 certification be required for Residential and small Non-residential Solar Water Heating Systems. Larger, Non-residential Solar Water and Pool Heating Systems should be OG-100 certified as proposed by Southwest.

- Staff recommends that Residential solar water heating systems utilize OG-100 certified collectors and be tested and certified to OG-300 standards by: (i) the SRCC; (ii) a Southwest-approved Nationally Recognized Testing Laboratory ("NRTL"); or (iii) an American National Standards Institute ("ANSI") accredited certifying organization.

Measurement, Evaluation, and Research

Measurement, Evaluation, and Research ("MER") should be performed, at a minimum, in accordance with the Rules, Section R14-2-2515. The Company may perform additional MER activities, where appropriate, so long as the costs associated with MER remain within ten percent of what has been projected for the Monitoring, Verification and Evaluation budget category in the Budget Table.

Reporting

Reporting should be done, at a minimum, in accordance with the Rules, Section R14-2-2509. The Company may provide additional reporting, where appropriate, so long as the costs associated with reporting remain reasonable.

Summary of Recommendations: Modified EE and RET Plan

Staff has made the following recommendations:

- Staff recommends that Southwest be allowed to transfer up to 20 percent of funding between the SGB Residential Rebates and SGB Homes programs, if appropriate, to accommodate participation levels.

- Staff recommends that Southwest be allowed to transfer up to 20 percent of funding between the SGB Business Rebates and SGB Custom Business programs, if appropriate, to accommodate participation levels.

- Staff also recommends that Southwest be allowed to transfer funds between budget categories within each program, as long as Administration costs retained by Southwest are limited to 10% of each program's individual budget.

- Staff recommends that the Company continue to research cost-effective measures, and that one or more additional air sealing measures be proposed in future filings, in any program where they are appropriate, if such measures are found to be cost-effective.

- Staff recommends approval of the Smart Low-Flow Showerhead, Window and Floor Insulation measures in the *SGB* Residential Rebates program.

- Staff recommends inclusion of the Tankless Water Heater and Attic Insulation measures in the *SGB* Residential Rebates program, but also recommends that Southwest work to limit program costs associated with delivering all measures for the *SGB* Residential Rebates program.

- Staff recommends against inclusion of the Wall Insulation measure in the *SGB* Residential Rebates program, but also recommends that the funding associated with this measure be used for other *SGB* Residential Rebates program measures.

- Staff recommends that the *SGB* Business Rebates program be approved and include all the measures proposed by the Company.

- Staff recommends that Southwest work to limit the program costs for the *SGB* Business Rebates program.

- Staff recommends approval of the *SGB* Homes program, along with all the measures proposed for inclusion.

- Staff recommends approval of the *SGB* Custom Business Rebates program, with the modification that all participants in the *SGB* Custom Business Rebates program will be required to verify savings in order to be eligible to receive rebates.

- Staff recommends that the *SGB* Distributed Generation program be approved for continuation.

- Staff recommends that a revised *SGB* Distributed Generation be submitted for Commission consideration if no CHP project begins the installation process during the 12 months following Commission approval of this continuation.

- Staff recommends that the *SGB* Low-income Conservation program be approved for continuation as part of the modified Southwest EE and RET Plan.

- Staff recommends that the *SGB* Residential Conservation Behavior program be approved.

- Staff recommends that Southwest review data from the first year of the program and that, following this review, the *SGB* Residential Conservation Behavior program be continued only if it produces documented and cost-effective energy savings.

- Staff recommends that Southwest report on the results from the *SGB* Residential Conservation Behavior program, including whether the program is cost-effective and should be continued, in the following Implementation Plan.

- Staff recommends that the *SGB* Solar Thermal Rebate program be approved, with the following modifications:

  - that the Solar Thermal Pool Heating measure not be approved for inclusion in the *SGB* Solar Thermal Rebates program as a Residential measure.

  - that funding which would have been used to allow Residential customers to participate in the Solar Thermal Pool Heating measure be used, instead, to allow additional participation by Residential customers in the Solar Thermal Water Heater measure.

  - that OG-300 certification be required for Residential and small Non-residential Solar Water Heating Systems. Larger, Non-residential Solar Water and Pool Heating Systems should be SRCC OG-100 certified as proposed by Southwest.

  - that Residential solar hot water systems utilize OG-100 certified collectors and be tested and certified to OG-300 standards by: (i) the SRCC; (ii) a Southwest-approved Nationally Recognized Testing Laboratory ("NRTL"); or (iii) an American National Standards Institute ("ANSI") accredited certifying organization.

Steven M. Olea
Director
Utilities Division

SMO:JMK:lhm\RM

ORIGINATOR: Julie McNeely-Kirwan

BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE
Chairman
BOB STUMP
Commissioner
SANDRA D. KENNEDY
Commissioner
PAUL NEWMAN
Commissioner
BRENDA BURNS
Commissioner

IN THE MATTER OF THE APPLICATION OF SOUTHWEST GAS CORPORATION FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF SOUTHWEST GAS CORPORATION DEVOTED TO ITS ARIZONA OPERATIONS; APPROVAL OF DEFERRED ACCOUNTING ORDER; AND FOR APPROVAL OF AN ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE TECHNOLOGY PORTFOLIO IMPLEMENTATION PLAN	DOCKET NO. G-01551A-10-0458 DECISION NO. ORDER

Open Meeting
To Be Determined
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Southwest Gas Corporation ("Southwest" or "the Company") is engaged in providing natural gas within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission.

Background

2. On November 12, 2010, Southwest Gas Corporation filed with the Arizona Corporation Commission ("Commission") an application for an increase in rates for service provided in Arizona. Included as part of the rate case filing was Southwest's *Arizona Energy*

Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan ("EE and RET Plan").

Modified EE and RET Plan

3. As part of the current rate case, and as noted in the Settlement Agreement (July 15, 2011), Southwest agreed to provide supplemental EE information in support of a modified EE and RET Plan with EE measures that are cost-effective at the measure level. Under the proposed Settlement Agreement, the modified EE and RET Plan was to have a proposed portfolio budget exceeding $4.4 million, with customer energy savings of at least 1,250,000 therms (not inclusive of therm equivalents) within nine months of Commission approval of the modified EE and RET Plan.

Scope of Review

4. The scope of review herein will be the Southwest EE and RET Plan, as modified under the proposed Settlement Agreement. This modified EE and RET Plan consists of eight proposed programs listed in the Summary Description Table (below), all named, or renamed, to reflect the "*Smarter, Greener, Better*" ("*SGB*") branding adopted by the Company. The analysis covers the eight programs (seven EE and one RET) and their associated measures, as proposed for inclusion in the modified Southwest EE and RET Plan. Cost-effectiveness has been calculated on a per-measure level for the proposed energy efficiency programs.[1] Additional detail on each program has been provided in individual sections, herein.

SUMMARY DESCRIPTION TABLE

Current (and former) Name	Existing/New	Description of program
SGB Residential Rebates (formerly Consumer Products)	Existing, new measures	Promotes Residential energy efficiency measures.
SGB Homes (formerly Energy Star Home)	Existing, new measures	Promotes Residential whole-house energy efficiency.
SGB Business Rebates (formerly Commercial Equipment)	Existing, new measures	Promotes Non-residential energy efficiency measures.
SGB Custom Business Rebates	New	Allows Non-Residential customers to design and propose energy efficiency projects, with rebates based on verifiable savings.

[1] New construction and major rehabilitation programs are generally reviewed for cost-effectiveness on a whole house or whole building basis, with the whole house or building treated as a measure.

Current (and former) Name	Existing/New	Description of program
SGB Distributed Generation (formerly Distributed Generation)	Existing	Promotes Non-residential CHP.
SGB Low Income Energy Conservation (formerly Low Income Energy Conservation)	Existing	Promotes low-income weatherization.
SGB Energy Education	New	Promotes energy efficient behaviors by both Residential and Non-residential customers.
SGB Solar Thermal Rebates	New	Promotes solar thermal water and pool heating systems for Residential and Non-residential customers

Budget

5. The budgets for the modified Southwest EE and RET Plan are listed by category in the table below. Individual program budgets have been adjusted to reflect the measures proposed in the Company's current filing. The total budget proposed for the modified Southwest EE and RET Plan is $8,386,545, as compared to the current approved portfolio budget of $4.4 million:

BUDGET TABLE

Program	Rebates	Administration	Outreach	Delivery	MV&E	Program Total Cost
Residential						
Residential Rebates	$ 2,108,900	$ 22,972	$ 183,774	$ 666,180	$ 45,944	$ 3,027,770
Homes	$ 1,810,500	$ 90,000	$ 270,000	$ 45,000	$ 45,000	$ 2,260,500
Total Residential	**$ 3,919,400**	**$ 112,972**	**$ 453,774**	**$ 711,180**	**$ 90,944**	**$ 5,288,270**
Non-Residential						
Business Rebates	$ 481,875	$ 44,500	$ 97,900	$ 222,500	$ 44,500	$ 891,275
Custom Business Rebates	$ 21,582	$ 3,921	$ 19,605	$ 50,971	$ 3,921	$ 100,000
Distributed Generation	$ 515,000	$ 23,500	$ 97,500	$ 97,500	$ 23,500	$ 757,000
Total Non-Residential	**$ 1,018,457**	**$ 71,921**	**$ 215,005**	**$ 370,971**	**$ 71,921**	**$ 1,748,275**
Low-Income						
L-I Weatherization[1]	$ 373,500	$ 67,500	$ 9,000	$ -	$ -	$ 450,000
L-I Bill Assistance[2]	$ -	$ -	$ -	$ -	$ -	$ 200,000
Total Low-Income	**$ 373,500**	**$ 67,500**	**$ 9,000**	**$ -**	**$ -**	**$ 650,000**
Education						
Residential Conservation Behavior	$ -	$ -	$ 200,000	$ -	$ -	$ 200,000

. . .

Renewable Energy Resource Technology						
Solar Thermal Rebates	$ 350,000	$ 15,000	$ 60,000	$ 67,500	$ 7,500	$ 500,000
Total Portfolio	**$ 5,661,357**	**$ 267,393**	**$ 937,779**	**$1,149,651**	**$ 170,365**	**$ 8,386,545**

[1]L-I Weatherization delivery and evaluation are performed by the Arizona Governor's Office of Energy Policy and community agencies.
[2]L-I Bill Assistance is not a rebate program. Administration is capped at $15,000.

6. The Company has requested flexibility to transfer funds between budget categories within programs, and between programs within each customer class. Staff recommends that Southwest be allowed to transfer up to 20 percent of funding between the SGB Residential Rebates and SGB Homes programs, if appropriate, to accommodate participation levels. Staff also recommends that Southwest be allowed to transfer up to 20 percent of funding between the SGB Business Rebates and SGB Custom Business programs, if appropriate to accommodate participation levels. Staff has also recommended that Southwest be allowed to transfer funds between budget categories within each program, as long as Administration costs retained by Southwest are limited to 10% of each program's individual budget.

EE and RET Portfolio Overview

7. The Southwest EE and RET Portfolio proposes the following eight programs and measures. Staff has recommended approval of all eight programs, and 23 of the 24 proposed measures, (excluding the Wall Insulation measure, which was not cost-effective), with the modifications listed herein:

- *SGB* Residential Rebates: (i) tankless water heaters; (ii) smart low-flow showerheads; and (iii) weatherization measures.
- *SGB* Homes: (i) Home Certification; (ii) Tankless Water Heaters; and (iii) Attic Insulation.
- *SGB* Business Rebates program: (i) tankless water heaters; (ii) condensing boilers; (iii) combination ovens; (iv) conveyor ovens (two types); (v) commercial dishwashers (five types); and (vi) air curtains.
- *SGB* Custom Business Rebates: Non-residential customer-proposed energy efficiency projects, including: (i) retrofits and/or improvements to existing systems; and (ii) first time installations that exceed industry standards.

. . .

- *SGB* Distributed Generation: high efficiency Combined Heap and Power ("CHP") technologies to large commercial and industrial customers.

- *SGB* Low-Income Energy Conservation ("LIEC"): weatherization for low-income households; bill assistance.

- *SGB* Residential Conservation Behavior: periodic reports (up to 4 reports per year) showing customers how their homes compare with similar homes, and recommending specific actions that the household can take to save energy.

- *SGB* Solar Thermal Rebates: (i) Solar Water Heating and (ii) Solar Pool Heating Systems.

Projected Savings

8. Southwest's modified EE and RET Plan is projected by the Company to save 1,262,000 therms within nine months of the Commission approving the modified EE and RET Plan. This projected level of savings exceeds the 1,250,000 therms required under the terms of the proposed Settlement Agreement:

Programs and Measures	Projected Savings
Residential	
Smarter, Greener, Better Residential Rebates	261,000
Smarter, Greener, Better Homes	241,000
Non-residential	
Smarter, Greener, Better Business Rebates	223,000
Smarter, Greener, Better Custom Business Rebates	54,000
Smarter, Greener, Better Distributed Generation	250,000
Low-income	
Smarter, Greener, Better Low-Income Energy Conservation	21,000
Educational	
Smarter, Greener, Better Residential Conservation Behavior	125,000
Renewable Energy Resource Technology	
Smarter, Greener, Better Solar Thermal Rebates	87,000
Total:	1,262,000

9. Staff's analysis indicates that the per-unit therm savings from the Tankless Water Heater measure are likely to be higher than initially estimated by the Company. This is significant because this measure is included in three programs and total participation for this measure is projected at more than 4,200. Based on the revised savings for this measure, if projected participation levels meet expectations, therm savings for the overall modified EE and RET Plan would increase to over 1.3 million therms.

. . .

Additional Savings

10. The projected therm savings listed above also do not include therm equivalents (such as kWh), or savings from building codes, both of which can be taken into account for purposes of meeting the energy efficiency savings standards under the Gas Energy Efficiency Rules ("Rules"). Annual projected therm savings from the Company's activities in support of energy efficient building codes for Commercial Buildings in the City of Mesa are estimated at 5,700 therms.

11. Some of the proposed portfolio measures (particularly those enhancing the thermal envelope for buildings) produce electric savings in addition to gas savings. For the modified EE and RET Plan as a whole, Staff has estimated annual electric savings at approximately 2.1 million kWh. These kWh, or therm equivalent, savings can also be taken into account for purposes of meeting the energy efficiency standards under the Rules.

Cost-Effectiveness

12. The table below lists the benefit-cost ratios for each of the measures proposed as part of each of the eight programs included in the modified EE and RET Plan. In order to be cost-effective, a measure must have a benefit-cost ratio of greater than 1.0, meaning that the avoided costs (or benefits) of a measure must be greater than the costs associated with purchasing and installing the measure. Staff's analysis indicates that 20 out of 24 EE measures have a benefit-cost ratio above 1.0 and are cost-effective.

13. The RET measures are also included in this table as part of Southwest's modified EE and RET Plan, but RET measures are not required to be cost-effective and Staff has not calculated or included benefit-cost ratios for these measures.

BENEFIT-COST RATIO TABLE

Programs and Measures	**Benefit-cost ratio**
Residential	
Smarter, Greener, Better Residential Rebates	
Tankless Water Heater	0.94
Smart Low-Flow Showerhead	1.21
Window	1.45
Attic Insulation	0.97
Floor Insulation	1.35
Wall Insulation	0.75

Smarter, Greener, Better Homes	
Home Certification	1.36
Tankless Water Heater	1.08
Attic Insulation	1.44
Non-residential	
Smarter, Greener, Better Business Rebates	
Tankless Water Heater	1.08
Condensing Boiler	1.47
Combination Oven	1.20
Conveyor Oven (<25")	2.70
Conveyor Oven (>25")	2.08
Dishwasher (Low Temp): Door Type	1.48
Dishwasher (High Temp/Gas Booster Heater): Under Counter	1.18
Dishwasher (High Temp/Gas Booster Heater): Door Type	1.53
Dishwasher (High Temp/Gas Booster Heater): Single Tank Conveyor	1.75
Dishwasher (High Temp/Gas Booster Heater): Multi-Tank Conveyor	2.26
Air Curtain	2.22
Smarter, Greener, Better Custom Business Rebates	
Typical Custom Business Project	3.55
Smarter, Greener, Better Distributed Generation	
Typical Distributed Generation Project	1.56
Low-income [2]	
Smarter, Greener, Better Low-Income Energy Conservation	
Typical Low-Income Energy Conservation Project	0.98
Educational	
Smarter, Greener, Better Energy Education	
Residential Conservation Behavior	1.24
Renewable Energy Resource Technology	
Smarter, Greener, Better Solar Thermal Rebates	
Solar Water Heater System	N/A
Solar Pool Heating System	N/A

Rebates

14. Limits. Staff reviewed the proposed rebates and determined that all the per-measure incentives were at 75 percent or below of the incremental costs of the proposed measures. Limits of 50 to75 percent of incremental cost are typical for Commission-approved energy efficiency programs. Some of the rebates, such as for the Custom Business and Solar Thermal Rebates programs feature rebates partly based on therm savings, but also include upper limits (usually up to 50 percent of installed cost) based on percentages of project or measure costs.

15. Exceptions. The Low-Income Energy Conservation program pays weatherization funds to community action agencies performing weatherization services, rather than paying out

[2] The benefit-cost ratio is based on actual program performance over four years. The health/safety and bill assistance components of the LIEC program provide benefits to ratepayers, but are not primarily designed to produce to energy savings and were not included in the cost-benefit analysis.

traditional incentives, while the Residential Conservation Behavior Program is educational in nature and does not offer rebates.

REBATE TABLE

Programs and Measures	Rebate	% of incremental cost
Residential		
Smarter, Greener, Better Residential Rebates		
Tankless Water Heater	$450	74%
Smart Low-Flow Showerhead	$30	75%
Window	$0.95/unit (per square foot)	73%
Attic Insulation	$0.20/unit (per square foot)	40%
Floor Insulation	$0.30/unit (per square foot)	71%
Wall Insulation	$0.45/unit (per square foot)	70%
Smarter, Greener, Better Homes		
Home Certification	$450	29%
Tankless Water Heater	$450	74%
Attic Insulation	$0.20/unit (per square foot)	40%
Non-residential		
Smarter, Greener, Better Business Rebates		
Tankless Water Heater	$450	74%
Condensing Boiler	$1.25/per MBTUH (based on input rating, usually 4-5,000 MBTUH)	75%
Combination Oven	$1,100	72%
Conveyor Oven (<25")	$400	71%
Conveyor Oven (>25")	$900	72%
Dishwasher (Low Temp): Door Type	$1,500	75%
Dishwasher (High Temp/Gas Booster Heater): Under Counter	$750	75%
Dishwasher (High Temp/Gas Booster Heater): Door Type	$1,575	75%
Dishwasher (High Temp/Gas Booster Heater): Single Tank Conveyor	$2,250	75%
Dishwasher (High Temp/Gas Booster Heater): Multi-Tank Conveyor	$3,000	75%
Air Curtain	$2,100	75%
Smarter, Greener, Better Custom Business Rebates		
Typical Custom Business Project	$1.00/therm 1st year annual saving OR 50% of eligible project cost (as determined by Southwest)	50% of eligible project cost

Smarter, Greener, Better Distributed Generation		
Typical Distributed Generation Project	Rebate per/kW, based on fuel efficiency	40%-50%/kW; and up to 75% of engineering study, up to $3,000
Low-income		
Smarter, Greener, Better Low-Income Energy Conservation		
Typical Low-Income Energy Conservation Project	N/A	N/A
Educational		
Smarter, Greener, Better Energy Education		
Residential Conservation Behavior	N/A	N/A
Renewable Energy Resource Technology		
Smarter, Greener, Better Solar Thermal Rebates		
Solar Water Heater System	$15/therm	Up to 50% of installed cost
Solar Pool Heating System	$15/therm	Up to 50% of installed cost

Modified EE and RET Plan: Descriptions

16. The following sections describe the individual programs, including issues specific to those programs.

SGB Residential Rebates

17. Program Description. The Southwest modified EE and RET *SGB* Residential Rebates Program proposes to include the following measures: (i) tankless water heaters; (ii) smart low-flow showerheads; and (iii) weatherization measures (windows, and attic, floor and wall insulation).

18. Tankless water heaters. Southwest proposes to continue offering rebates for tankless water heaters. Tankless water heaters were originally approved for inclusion in the Southwest portfolio in Decision No. 71718 (June 3, 2010).

19. The Energy Star site states that an estimated 15 percent of an average home's energy use goes to heating water, and that tankless water heaters save 45 percent to 60 percent over the minimum standards. Another factor increasing the overall cost-effectiveness of tankless water heaters is an expected lifespan (20 years), that is approximately twice that of high efficiency storage water heaters (8-10 years).

20. Smart Low-flow Showerheads. Southwest also proposes to continue smart showerheads as a measure in its *SGB* Residential Rebates program. The "smart" showerhead is a

low-flow showerhead with a water turn-off feature, designed to minimize the amount of hot water wasted during the warm-up cycle, before the user enters the shower. The "smart" feature includes a thermostatic valve that pauses a shower's water flow once the water is hot enough for bathing, when the shower may otherwise be running unattended. Once a user is ready to actually enter the shower, he or she then turns on an already-heated flow of water. This measure is designed to both conserve water and reduce energy use.

21. Weatherization measures. Southwest also proposes to offer rebates on weatherization measures. The weatherization measures are designed to improve the energy efficiency and comfort of homes by enhancing windows and improving insulation of the walls, ceilings, and floors. Insulation and air sealing save energy during both cooling and heating seasons, resulting in both natural gas and electric savings. The Energy Star site estimates that, if combined with air sealing, insulation can save up to 10 percent of a typical home's energy costs.

22. With respect to air sealing measures, only the Windows measure has been proposed as part of the modified Southwest EE and RET Plan. (An Energy Star window reduces the heat transfer in to the home, uses energy efficient materials for the frame, and is coated to provide a sun screen.) Staff has recommended that the Company continue to research cost-effective measures, and that one or more additional air sealing measures be proposed in future filings, if they are found to be cost-effective.

23. Program Analysis/Cost-effectiveness. The showerhead, window and floor insulation measures have benefit-cost ratios above 1.0 and are cost-effective. Staff's analysis indicates that, although the Tankless Water Heater and Attic Insulation measures have benefit-cost ratios slightly below 1.0, with ratios of 0.94 and 0.97 respectively, both measures are very close to the level required for cost-effectiveness. Taking into account avoided environmental costs, the value of which has not been established, but which are greater than zero, these measures are likely to be cost-effective in practice. In addition, the inclusion of these measures in the Residential Rebates program provides Residential customers with a greater range of options for enhancing the energy efficiency of their existing homes. Staff has recommended that the tankless water heater and attic insulation measures be approved.

24. The Wall Insulation measure has an estimated benefit-cost ratio of 0.75, putting it well below the level required to find a measure cost-effective, even taking into account environmental savings. Staff has recommended against inclusion of the Wall Insulation measure, but has also recommended that the funding associated with this measure be used for other *SGB* Residential Rebates program measures, if approved by the Commission.

25. Program Cost Issue. The Tankless Water Heater measure has a benefit-cost ratio above 1.0 as part of the *SGB* Homes and Business Rebates programs, but drops slightly below 1.0 as part of the *SGB* Residential Rebates program. The same variance on the benefit-cost ratio exists for the Attic Insulation measure, which is also part of the *SGB* Homes program. Staff's analysis indicates that these variances result from higher per-unit non-incentive (or program) costs associated with the *SGB* Residential Rebates program. In response to an inquiry from Staff, Southwest reported that the large number of rebates and higher level of verification and inspection necessary for the Residential and Business Rebates programs have resulted in increased delivery costs, compared to other programs. (There is less negative impact to the Business Rebates program, due to the generally higher benefit-cost ratios for that program.) Staff has recommended that Southwest work to limit the program costs for the *SGB* Residential Rebates program.

26. Staff Recommendations: Summary. Below are Staff's recommendations with respect to the Residential Rebates program:

- Staff has recommended approval of the Smart Low-Flow Showerhead, Window and Floor Insulation measures in the Residential Rebates program.
- Staff has recommended inclusion of the Tankless Water Heater and Attic Insulation measures in the Southwest EE and RET Plan, but has also recommended that Southwest work to limit program costs associated with delivering all measures for the *SGB* Residential Rebates program.
- Staff has recommended against inclusion of the Wall Insulation measure in the *SGB* Residential Rebates program, but that the funding associated with the measure be used for other measures in the program.
- Staff has recommended that the Company continue to research cost-effective measures, and that one or more additional air sealing measures be proposed in future filings, in any program where they are appropriate, if such measures are found to be cost-effective.

- Staff has recommended that Southwest work to limit the program costs for the *SGB* Residential Rebates program.

SGB Homes

27. Program Description. The Southwest modified EE and RET *SGB* Homes program proposes to offer (i) Home Certification; (ii) Tankless Water Heaters; and (iii) Attic Insulation. The Smarter Greener Better Homes program is designed to increase the participation of Arizona homebuilders in building more energy-efficient housing. Rebates will be offered to homebuilders for homes certified as Energy Star, and for installing tankless water heaters and energy efficient attic insulation.

28. Home Certification. To be certified under the program, homes are required to meet Version 3.0 of EPA's program requirements, following either the Energy Star Prescriptive Path, or the Energy Star Performance Path. The Version 3.0 Overview states that homes built to Version 3 Guidelines "will be at least 20 percent more energy efficient than homes built to the 2009 International Energy Conservation Code." Mandatory requirements include improvements to: (i) the thermal envelope; (ii) heating, ventilation and air conditioning (HVAC); and (iii) the water management system. Verification by a third party rater is required.

29. Tankless Water Heaters and Attic Insulation. These measures have been discussed with respect to the *SGB* Residential Rebates program, above. The two measures differ as part of the *SGB* Homes because, with lower per-unit program costs, both have a higher benefit-cost ratio and improved cost-effectiveness.

30. Program Analysis/Cost-effectiveness. All three proposed measures have benefit-cost ratios above 1.0 and are cost-effective. Energy efficiency measures installed as part of initial construction are usually more cost-effective than retrofits. In addition, energy efficiency measures that are part of the original construction are experienced over the full lifespan of a structure, rather than just during the period following a retrofit.

31. Staff Recommendation. Staff has recommended approval of the *SGB* Homes program, along with all three proposed measures.

. . .

SGB Business Rebates

32. Program Description. The proposed Southwest modified EE and RET *SGB* Business Rebates program offers (i) tankless water heaters; (ii) condensing boilers; (iii) combination ovens; (iv) conveyor ovens (two types); (v) commercial dishwashers (five types); and (vi) air curtains.

33. Southwest Gas will offer the *SGB* Business Rebates program to both new and existing non-residential customers. It is designed to encourage the purchase of high efficiency equipment to reduce energy consumption. Rebates are available for purchasing and installing qualifying natural gas high efficiency measures at individually and master metered commercial properties.

34. Program Analysis/Cost-effectiveness. The *SGB* Business Rebates program and the *SGB* Residential Rebates program include a large number of rebates, and Southwest has indicated that both programs require a higher level of verification and inspection compared to other programs. This results in higher delivery costs and impacts cost-effectiveness. But commercial equipment is generally used more hours per year, making higher savings possible for Non-residential programs. This is true for the *SGB* Business Rebates program, which has generally higher savings and benefit-cost ratios than the *SGB* Residential Rebates program. All the measures proposed for the *SGB* Business Rebates are cost-effective even with higher delivery costs.

35. Staff Recommendation. Analysis indicates that all the *SGB* Business Rebates program measures have benefit-cost ratios above 1.0 and are cost-effective. Staff has recommended that the program be approved and include all the measures proposed by the Company.

SGB Custom Business Rebates

36. Program Description. The *SGB* Custom Rebates program allows Non-residential customers to design their energy efficiency projects, including: (i) retrofits and/or improvements to existing systems; and (ii) first time installations that exceed industry standards. Proposed measures must produce verifiable natural gas usage reductions, be installed in existing structures

or new construction, have a minimum useful life of seven years, and exceed minimum cost-effectiveness.

37. Program Analysis/Issues. Since the *SGB* Custom Business Rebates program is intended to allow Non-residential customers to propose energy efficiency projects tailored to meet their specific needs, no two sets of measures are likely to be the same. Cost-effectiveness analysis was done on the basis of incremental costs and average therm savings for eight typical projects, combined with the program costs projected specifically for the *SGB* Custom Business Rebates.

38. The *SGB* Custom Business Rebates program, as proposed, includes a "Commissioning Opt-Out." The Opt-Out would allow participating customers to choose reduced rebates, rather than conduct the commissioning activities. (For purposes of the SGB Custom Business Rebates program, "commissioning" includes verification of project savings and confirmation that the measures are operating as intended.) Because verification and confirmation are required in order to ascertain whether measures are achieving the desired energy savings, the Opt-Out provision should be removed from the proposed *SGB* Custom Business Rebates program.

39. Staff Recommendation. Staff has recommended approval of the *SGB* Custom Business Rebates program, with the modification that all participants be required to verify savings in order to be eligible to receive rebates, i.e., the Opt-Out provision not be approved.

SGB Distributed Generation

40. Program Description. Southwest will offer the Smarter Greener Better Distributed Generation ("*SGB* Distributed Generation") program to large commercial and industrial customers in the Company's Arizona service territory. Specifically, the SGB Distributed Generation program will promote high efficiency Combined Heat and Power ("CHP") technologies.

41. Distributed Generation is defined as localized, on-site mechanical or electrical power generation, while CHP describes any system that uses a primary energy source to simultaneously produce electric energy and useful process heat. Most CHP systems are configured to generate electricity, recapture the waste heat, and use that heat for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying, or any . . .

other thermal need. Alternately, CHP may use excess heat from industrial processes and convert it into electricity.

42. Program Analysis/Issues. Southwest's Distributed Generation program was originally approved in September 2007. To date, although Southwest has been actively promoting the program, no CHP projects have gone forward, largely due to customer concerns about the high initial cost of CHP. Keeping the program in place has been reasonable, given the potentially high savings associated with CHP, and the comparatively low costs associated with the promotion process. (For example, during 2009 the total cost for this program was $1,275, while in 2010, during active discussions, the total cost came to $8,039.)

43. Southwest has now partnered with the Arizona Energy Office (now the Governor's Office of Energy Policy ("OEP")), which received an American Recovery and Reinvestment Act CHP grant, allowing applicants to qualify for incentives from both programs, and potentially increasing the level of incentive to as much as 75 percent of the installed cost.

44. In September 2010, Southwest received an application from a hospital in southern Arizona to install a CHP system. The contractor working on the installation of the system was targeting completion in 2010, but has notified Southwest that the CHP project has been delayed. The turbine is on site, but the contractor has stated that it is still in negotiations with Tucson Electric Power regarding the interconnection agreement. As a result of this delay, the installation of the required Southwest facilities has been delayed. Southwest has completed the preliminary engineering, right-of-way research, acquisition of the necessary easements, and pipeline design. Once the system is installed and is in operation, Southwest Gas will verify the efficiency during operation before the incentive will be distributed.

45. Staff Recommendation. Staff has recommended that the *SGB* Distributed Generation program be approved for continuation, but has recommended that a revised *SGB* Distributed Generation be submitted for Commission consideration if no CHP project begins the installation process during the 12 months following Commission approval of this continuation.

. . .

. . .

SGB Low Income Energy Conservation

46. Program Description. Southwest proposes to continue the Low-Income Energy Conservation ("LIEC") program for income-qualified residential customers in the Company's Arizona service territory. The program targets low-income customers who require weatherization for their homes and/or emergency assistance to pay their utility bills. The program assists low-income households in increasing their energy efficiency.

47. The weatherization component of the program includes both home weatherization and consumer education for income-qualified residences. Energy improvements, such as adding insulation to the walls and roofs, can last for the remaining life of the dwelling, reducing energy usage and lowering utility bills.

48. Program measures fall into four major categories: 1) duct repair; 2) infiltration control; 3) insulation (including attic, duct and floor); and 4) repair or replacement of appliances that are not operational or pose a health hazard. Typical weatherization services include installing insulation, sealing, tuning and repairing cooling and heating systems, and mitigating heat gain through windows, doors, and other infiltration points.

49. Program Analysis/Issues. At 0.98, the *SGB* Low-Income program comes in slightly below the benefit-cost ratio of 1.0 required for cost-effectiveness. Taking into account avoided environmental costs, the value of which has not been established, but which are greater than zero, the *SGB* Low-income Conservation program is likely to be cost-effective in practice. In addition, during most program years, Southwest participates in special projects that improve overall LIEC program cost-effectiveness, such as the renovation of multifamily housing. These projects involve renovating an entire low-income multifamily building, and can produce savings with a higher benefit-cost ratio, due to economies of scale. The City of Phoenix has notified Southwest that it plans to propose a special project for the 2011/2012 program year.

50. Staff Recommendation. The *SGB* LIEC program addresses the energy efficiency needs of low-income Residential customers on a cost-effective basis, reducing utility costs and improving the health and safety for low-income households. Staff has recommended that the *SGB*

. . .

Low-income Conservation program be approved for continuation as part of the modified Southwest EE and RET program.

SGB Residential Conservation Behavior

51. Program Description. Southwest has proposed a Residential Conservation Behavior ("*SGB* Conservation Behavior") program that would drive customer conservation behavior by providing participating residential customers with periodic reports (up to 4 reports per year) showing how their homes compare with similar homes, and recommending specific actions that the household can take to save energy. Reports would be mailed to customers, and participants would also be encouraged to access a program web portal for more information.

52. The *SGB* Conservation Behavior program would target approximately 23,000 residential customers in the Company's Arizona service territory and is estimated to result in savings of approximately 125,000 therms. This program is similar to the Arizona Public Service Company ("APS") Residential Conservation Behavior program that recently launched on a pilot basis. If both utilities continue their Residential Conservation Behavior programs in the future, Southwest Gas will explore a possible partnership with APS.

53. Program Analysis/Issues. Conservation behavior programs should be designed to protect customer confidentiality. Southwest has informed Staff that it will require the contractor to sign a confidentiality agreement to protect customer data. Customers chosen to participate in the program will also have a simple way to opt out, should they choose not to participate.

Staff Recommendations

54. Staff has recommended that the Conservation Behavior program be approved.

55. Staff has recommended that Southwest review data from the first year of the program and that, following this review, the Conservation Behavior program be continued only if it produces documented and cost-effective energy savings.

56. Staff has recommended that Southwest report on the results from the Conservation Behavior program, including whether the program is cost-effective and should be continued, in the following Implementation Plan.

. . .

SGB Solar Thermal Rebates

57. Program Description. The *SGB* Solar Thermal Rebates program would offer rebates to both Residential and Non-residential customers for Solar Water Heating and Solar Pool Heating Systems. Rebates would be paid on qualified solar thermal systems based on proof of purchase and installation.

58. Program Analysis/Issues. Due to the high cost, most Residential customers do not heat their pools, so installing a Residential solar pool heater is likely to extend the swimming season without saving energy. Alternatively, Non-residential customers, such as hotels and resorts, are likely to utilize pool heaters to accommodate winter visitors, a differing usage pattern that creates opportunities for energy savings. (Renewable programs governed by the REST Standards include commercial solar pool heaters, but not residential solar pool heaters. See R14-2-1802.B.3.)

59. The OG-100-certified collectors are the qualifying measure specification for the SGB Solar Thermal Rebates program, but OG-100 certification applies to collectors only. In comparison, the OG-300 certification covers complete packaged water heating systems for residential and small commercial buildings. The OG-300 certification rates the performance of an entire system, rather than only the collector, and would provide better, more reliable, information on residential and small commercial applications. (Domestic Solar Water Heating Systems must also be rated and certified using the OG-300 system under the APS 2011 REST Plan.)

60. OG-100 certification remains appropriate for large, non-residential systems, because, while there is currently no whole-system certification for larger commercial systems (which vary from customer to customer), the OG-100 collector rating shows the performance of the collector, which is the most significant component of a solar water heater in either a residential or non-residential application.

Recommendations

61. Staff has recommended that the *SGB* Solar Thermal Rebate program be approved, with the following modifications:

. . .

- that the Solar Thermal Pool Heating measure not be approved for inclusion in the *SGB* Solar Thermal Rebates program as a Residential measure.

- that funding which would have been used to allow Residential customers to participate in the Solar Thermal Pool Heating measure be used, instead, to allow additional participation by Residential customers in the Solar Thermal Water Heater measure.

- that OG-300 certification be required for Residential and small Non-residential Solar Water Heating Systems. Larger, Non-residential Solar Water and Pool Heating Systems should be OG-100 certified as proposed by Southwest.

- that Residential solar water heating systems utilize OG-100 certified collectors and be tested and certified to OG-300 standards by: (i) the SRCC; (ii) a Southwest-approved Nationally Recognized Testing Laboratory ("NRTL"); or (iii) an American National Standards Institute ("ANSI") accredited certifying organization.

Measurement, Evaluation, and Research

62. Measurement, Evaluation, and Research ("MER") should be performed, at a minimum, in accordance with the Gas Energy Efficiency Rules, Arizona Administrative Code R14-2-2515. The Company may perform additional MER activities, where appropriate, so long as the costs associated with MER remain within ten percent of what has been projected for the Monitoring, Evaluation and Research budget category in the Budget Table

Reporting

63. Reporting should be done, at a minimum, in accordance with the Gas Energy Efficiency Rules, Section R14-2-2509. The Company may provide additional reporting, where appropriate, so long as the costs associated with reporting remain reasonable.

Summary of Recommendations: Modified EE and RET Plan

64. Staff has made the following recommendations:

- Staff has recommended that Southwest be allowed to transfer up to 20 percent of funding between the SGB Residential Rebates and SGB Homes programs, if appropriate, to accommodate participation levels.

- Staff has recommended that Southwest be allowed to transfer up to 20 percent of funding between the SGB Business Rebates and SGB Custom Business programs, if appropriate, to accommodate participation levels.

. . .

- Staff has also recommended that Southwest be allowed to transfer funds between budget categories within each program, as long as Administration costs retained by Southwest are limited to 10% of each program's individual budget.

- Staff has recommended that the Company continue to research cost-effective measures, and that one or more additional air sealing measures be proposed in future filings, in any program where they are appropriate, if such measures are found to be cost-effective.

- Staff has recommended approval of the Smart Low-Flow Showerhead, Window and Floor Insulation measures in the *SGB* Residential Rebates program.

- Staff has recommended inclusion of the Tankless Water Heater and Attic Insulation measures in the *SGB* Residential Rebates program, but has also recommended that Southwest work to limit program costs associated with delivering all measures for the *SGB* Residential Rebates program.

- Staff has recommended against inclusion of the Wall Insulation measure in the SGB Residential Rebates program, but also recommends that the funding associated with this measure be used for other SGB Residential Rebates program measures.

- Staff has recommended that the *SGB* Business Rebates program be approved and include all the measures proposed by the Company.

- Staff has recommended that Southwest work to limit the program costs for the *SGB* Business Rebates program.

- Staff has recommended approval of the *SGB* Homes program, along with all the measures proposed for inclusion.

- Staff has recommended approval of the *SGB* Custom Business Rebates program, with the modification that all participants in the *SGB* Custom Business Rebates program will be required to verify savings in order to be eligible to receive rebates.

- Staff has recommended that the *SGB* Distributed Generation program be approved for continuation.

- Staff has recommended that a revised *SGB* Distributed Generation be submitted for Commission consideration if no CHP project begins the installation process during the 12 months following Commission approval of this continuation.

- Staff has recommended that the *SGB* Low-income Conservation program be approved for continuation as part of the modified Southwest EE and RET Plan.

...

- Staff has recommended that the *SGB* Residential Conservation Behavior program be approved.

- Staff has recommended that Southwest review data from the first year of the program and that, following this review, the *SGB* Residential Conservation Behavior program be continued only if it produces documented and cost-effective energy savings.

- Staff has recommended that Southwest report on the results from the *SGB* Residential Conservation Behavior program, including whether the program is cost-effective and should be continued, in the following Implementation Plan.

- Staff has recommended that the *SGB* Solar Thermal Rebate program be approved, with the following modifications:

  - that the Solar Thermal Pool Heating measure not be approved for inclusion in the *SGB* Solar Thermal Rebates program as a Residential measure.

  - that funding which would have been used to allow Residential customers to participate in the Solar Thermal Pool Heating measure be used, instead, to allow additional participation by Residential customers in the Solar Thermal Water Heater measure.

  - that OG-300 certification be required for Residential and small Non-residential Solar Water Heating Systems. Larger, Non-residential Solar Water and Pool Heating Systems should be SRCC OG-100 certified as proposed by Southwest.

  - that Residential solar hot water systems utilize OG-100 certified collectors and be tested and certified to OG-300 standards by: (i) the SRCC; (ii) a Southwest-approved Nationally Recognized Testing Laboratory ("NRTL"); or (iii) an American National Standards Institute ("ANSI") accredited certifying organization.

CONCLUSIONS OF LAW

1. Southwest is an Arizona public service corporation within the meaning of Article XV, Section 2, of the Arizona Constitution.

2. The Commission has jurisdiction over Southwest and over the subject matter of the application.

3. The Commission, having reviewed the application and Staff's Memorandum dated September 30, 2011, concludes that it is in the public interest to approve the Southwest EE and RET Plan with modifications as discussed herein.

ORDER

IT IS THEREFORE ORDERED that the modified Southwest Gas Corporation EE and RET Plan is approved, with the modifications discussed herein.

IT IS FURTHER ORDERED that Southwest Gas Corporation is allowed to transfer up to 20 percent of funding between the *SGB* Residential Rebates and *SGB* Homes programs, if appropriate, to accommodate participation levels.

IT IS FURTHER ORDERED that Southwest Gas Corporation is allowed to transfer up to 20 percent of funding between the *SGB* Business Rebates and *SGB* Custom Business Rebates programs, if appropriate, to accommodate participation levels.

IT IS FURTHER ORDERED that Southwest be allowed to transfer funds between budget categories within each program, as long as Administration costs retained by Southwest are limited to 10% of each program's individual budget.

IT IS FURTHER ORDERED that Southwest Gas Corporation shall continue to research cost-effective measures, and that one or more additional air sealing measures shall be proposed in future filings, in any program where they would be appropriate, if such measures are found to be cost-effective.

IT IS FURTHER ORDERED that the Smart Low-Flow Showerhead, Window and Floor Insulation measures be included in the *SGB* Residential Rebates program.

IT IS FURTHER ORDERED that the Tankless Water Heater and Attic Insulation measures be included in the *SGB* Residential Rebates program, and that Southwest Gas Corporation shall work to limit program costs associated with delivering all measures for the *SGB* Residential Rebates program.

IT IS FURTHER ORDERED that the Wall Insulation measure not be included in the SGB Residential Rebates program, but that the funding associated with this measure be used for other SGB Residential Rebates program measures.

IT IS FURTHER ORDERED that the *SGB* Business Rebates program be approved and include all the measures proposed by Southwest Gas Corporation in its current application.

. . .

IT IS FURTHER ORDERED that Southwest Gas Corporation shall work to limit program costs for the *SGB* Business Rebates program.

IT IS FURTHER ORDERED that the *SGB* Homes program be approved and include all measures proposed by Southwest Gas Corporation in its current application.

IT IS FURTHER ORDERED that the *SGB* Custom Business Rebates program is approved, with the modification that all participants in the *SGB* Custom Business Rebates program will be required to verify savings in order to be eligible to receive rebates i.e., the Opt-Out provision not be approved..

IT IS FURTHER ORDERED that *SGB* Distributed Generation program is approved for continuation.

IT IS FURTHER ORDERED that a revised *SGB* Distributed Generation program shall be submitted for Commission consideration if no CHP project begins the installation process during the 12 months following the effective date of the Decision approving the modified Southwest EE and RET Plan.

IT IS FURTHER ORDERED that the *SGB* Low-income Conservation program is approved for continuation as part of the modified Southwest EE and RET Plan.

IT IS FURTHER ORDERED that the *SGB* Conservation Behavior program is approved as a one-year pilot. Once the program is ramped up, data from the first twelve months of activity should be collected and reviewed to confirm that the pilot has achieved a cost-effective level of savings.

IT IS FURTHER ORDERED that the *SGB* Residential Conservation Behavior program is approved.

IT IS FURTHER ORDERED that Southwest Gas Corporation shall review data from the first year of the program and that, following this review, the *SGB* Residential Conservation Behavior program be continued only if it produces documented and cost-effective energy savings.

IT IS FURTHER ORDERED that Southwest Gas Corporation shall report on the results from the *SGB* Residential Conservation Behavior program, including whether the program is cost-effective and should be continued, in the following Implementation Plan.

IT IS FURTHER ORDERED that the *SGB* Solar Thermal Rebate program is approved, with the following modifications:

- that the Solar Thermal Pool Heating measure is not approved for inclusion in the *SGB* Solar Thermal Rebates program as a Residential measure.

- that funding which would have been used to allow Residential customers to participate in the Solar Thermal Pool Heating measure shall be used, instead, to allow additional participation by Residential customers in the Solar Thermal Water Heater measure.

- that OG-300 certification shall be required for Residential and small Non-residential Solar Water Heating Systems. Larger, Non-residential Solar Water and Pool Heating Systems shall be OG-100 certified as proposed by Southwest.

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

- that Residential solar water heating systems shall utilize OG-100 certified collectors and be tested and certified to OG-300 standards by: (i) the SRCC; (ii) a Southwest-approved Nationally Recognized Testing Laboratory ("NRTL"); or (iii) an American National Standards Institute ("ANSI") accredited certifying organization.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this _____day of _____, 2011.

ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO:JMK:lhm\RM

SERVICE LIST FOR: Southwest Gas Corporation
DOCKET NO. G-01551A-10-0458

Mr. Justin Lee Brown
Ms. Catherine M. Mazzeo
Southwest Gas Corporation
5241 Spring Mountain Road
Post Office Box 98510
Las Vegas, Nevada 89193-8510

Ms. Debra S. Gallo
Director/Government and
State Regulatory Affairs
Southwest Gas Corporation
5241 Spring Mountain Road
Post Office Box 98510
Las Vegas, Nevada 89193-8510

Mr. Daniel W. Pozefsky
Chief Counsel
RUCO
1110 West Washington Street, Suite 220
Phoenix, Arizona 85007

Mr. Michael W. Patten
Roshka DeWulf & Patten
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004
Attorneys for Tucson Electric Power Company

Mr. Philip J. Dion
Ms. Melody Gilkey
Tucson Electric Power Company
One South Church Street, Suite 200
Tucson, Arizona 85701

Mr. Timothy M. Hogan
Arizona Center for Law in the Public Interest
202 East McDowell Road, Suite 153
Phoenix, Arizona 85004
Attorneys for SWEEP

Ms. Cynthia Zwick
1940 East Luke Avenue
Phoenix. Arizona 85016

Mr. Jeff Schlegel
SWEEP Arizona
1167 West Samalayuca Drive
Tucson, Arizona 85704-3224

Mr. Michael M. Grant
Gallagher & Kennedy, P.A.
375 East Camelback Road
Phoenix, Arizona 85016-9225
Attorney for Arizona Investment Council

Ms. Laura E. Sanchez
Post Office Box 287
Albuquerque, New Mexico 87103
Attorney for NRDC

Mr. Gary Yaquinto
President & CEO
Arizona Investment Council
2100 North Central Avenue, Suite 2 10
Phoenix, Arizona 85004

Mr. Steven M. Olea
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Ms. Janice M. Alward
Chief Counsel, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007